

REMARKS

Prior to this Reply, Claims 1-53 were pending. Through this Reply, Claims 1-9, 11-15, 17-19, 21-29, 31-33 and 36-53 have been amended, and Claims 54-100 have been added. Accordingly, Claims 1-100 are now at issue in the present case.

I. Allowed and Allowable Claims

The Examiner allowed Claims 21-35. Although Claim 30 is not listed in the Office Action Summary as being allowed, Claim 30 is indicated as allowed in the Detailed Action on pages 8 and 9 of the Office Action. Therefore, Applicants believe that the Examiner intended Claim 30 to be allowed.

The Examiner objected to Claims 5, 12, 13, 22, 25-27, 29, 44-46 and 53 as being dependent upon a rejected base claim. However, the Examiner indicated that such claims would be allowable if they were rewritten in independent form to include all of the limitations of their respective base claims and any intervening claims.

Claim 15 is indicated as rejected in the Office Action Summary; however, Claim 15 is not discussed in the Detailed Action of the Office Action. Furthermore, Claims 5 and 15 recite identical limitations and Claim 5 is objected to. Therefore, Applicants believe that the Examiner intended Claim 15 to be objected to.

Claims 22, 25-27 and 29 are allowed. Therefore, Claims 22, 25-27 and 29 need not be rewritten in independent form to be allowable.

Instead of rewriting Claims 5, 12, 13, 15, 44-46 and 53 in independent form, Applicants offer the amendments presented above and the arguments presented below.

II. Claim Rejections

The Examiner rejected Claims 1, 2, 4, 6-11, 14, 16-20, 36-40, 43 and 47-52 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,429,984 to Alex (hereinafter “Alex”).^{1,2} Applicants respectfully traverse the rejection because the Examiner has failed to establish a *prima facie* case of obviousness in rejecting the claims.

As set forth in MPEP § 2143, in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

Applicants traverse the rejection because the Examiner has failed to show that Alex teaches or suggests all of the claim limitations.³ Among other things, the Examiner has failed to address at least one claim limitation in each of the independent claims.

With respect to Claim 1, the Examiner has failed to show any teaching or suggestion in Alex of the following language: “writing a test pattern to a track of a magnetic disk, wherein said test pattern has a higher data density than a data density of user data in said track.” In rejecting Claims 2, 43 and 52, the Examiner states “Alex further teaches writing information to at least a first track of said magnetic disk at a first frequency, wherein said first frequency is higher than a nominal frequency (Col. 10, Lines 3-10)” (emphasis added). The cited language states:

¹ Applicants believe the Examiner intended Claim 20 to be rejected over Alex. Although Claim 20 is not listed on page 2 of the Office Action, Claim 20 is discussed at page 6 of the Office Action.

² Applicants believe that any reference to Sacks et al. in the Office Action (see, e.g., page 2) is a typographical error.

³ It should be noted that Applicants do not admit that the Examiner has met her burden with respect to the other two requirements associated with establishing a *prima facie* case of obviousness. Accordingly, Applicants may address such requirements at a later time, if necessary.

FIG. 10 illustrates a test circuit 80 used to obtain the data illustrated in FIG. 1. Specifically, test circuit 80 includes a read-write analyzer 81 that supplies a signal to head 43 and that receives a readback signal from the head 43. Analyzer 81 supplies the readback signal (which is undergoing decay) to each of a spectrum analyzer 82 and an oscilloscope 83. Spectrum analyzer 82 and oscilloscope 83 are used by a user to manually detect the change in the readback signal in the frequency and time domains respectively.

Applicants are at a complete loss as to how the Examiner interprets the language in Col. 10, lines 3-10 of Alex to teach or suggest a test pattern in a track of disk 12 with a higher data density than a data density of user data in the track. The above-quoted language relates to a user manually detecting changes in the frequency and time domains of the readback signal using spectrum analyzer 82 and oscilloscope 83. There is no discussion of data density on disk 12.

With respect to Claim 11, there is no teaching or suggestion in Alex of the following language: “writing a test pattern to a track of a magnetic disk, wherein said test pattern has a lower data density than a data density of user data in said track” (emphasis added) as the Examiner correctly notes in objecting to Claim 12.

With respect to Claim 36, the Examiner has failed to show any teaching or suggestion in Alex of the following language: “said test pattern in a data track of said data tracks and having a greater susceptibility to thermal decay than user data in said data track” (emphasis added). In rejecting Claim 36, the Examiner has ignored this language.

With respect to Claim 47, the Examiner has failed to show any teaching or suggestion in Alex of the following language: “said test pattern in said data track and having a different data density in said data track than user data in said data track” as mentioned above for Claims 1 and 11.

As set forth in MPEP § 2143.03, “all words in a claim must be considered in judging the patentability of that claim against the prior art” (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). Clearly, the Examiner has not considered all of the words in the independent claims in judging their patentability against the prior art.

As set forth in MPEP § 2142, the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. In view of the above, Applicants believe that the Examiner has failed to meet her burden. Accordingly, until the Examiner meets her burden, Applicants are under no obligation to submit any evidence of nonobviousness (MPEP § 2142).

For all of the above reasons, Applicants believe that independent Claims 1, 11, 36 and 47 are patentably distinguishable from Alex. For at least the above, reasons, Applicants submit that the claims that depend from the independent claims are likewise patentably distinguishable from Alex.

Many of the dependent claims are patentable for reasons in addition to those provided above. It should be noted that Applicants do not admit that the Examiner has met her burden with respect to the dependent claims associated with establishing a *prima facie* case of obviousness. Accordingly, Applicants may address the dependent claims at a later time, if necessary.

The Examiner rejected Claims 3, 41 and 42 under 35 U.S.C. § 103(a) as being unpatentable over Alex (as applied to Claim 2), and further in view of U.S. Patent No. 6,091,559 to Emo et al. (hereinafter “Emo”). Applicants respectfully traverse the rejection.

Claim 3 states that “said track is located within a first zone of said magnetic disk, said test frequency [of said test pattern in said track that is higher than a nominal data frequency for

user data in said track] is a nominal data frequency for user data in a second zone of said magnetic disk, and said first zone is located towards an inside diameter of said magnetic disk relative to said second zone” (emphasis added). The Examiner admits that Alex does not disclose all of the limitations of Claim 3 (Office Action at page 8). However, the Examiner argues that Emo discloses the missing limitations. Applicants disagree.

The Examiner cites Col. 18, lines 20-41 of Emo. The Examiner states that “Emo teaches that each zone has its own frequency in order to optimize head to disc performance when performing read/write operations.” Even if this is true, there is no teaching in Alex or Emo of “said test frequency is a nominal data frequency for user data in a second zone” (emphasis added). That is, the test pattern has a higher frequency than user data in the zone it is located, yet has the same frequency as user data in another zone. Unfortunately, the Examiner has ignored this language and instead cites Emo “to provide different frequencies in the zones in order to optimize head to disk performance.” Claim 3 clearly goes far beyond conventional zone recording. For at least the above reasons, Applicants submit that Claim 3 is patentably distinguishable from Alex and Emo. For similar reasons, Applicants submit that Claims 41 and 42 are patentably distinguishable from Alex and Emo.

III. New Claims

Claims 54-100 have been added. No new matter has been added.

With respect to Claim 54, there is no teaching or suggestion in Alex of the following language: “said test pattern comprises a 24T or greater pattern” as the Examiner correctly notes in objecting to Claim 53.

With respect to Claim 55, there is no teaching or suggestion in Alex of the following language: “said test pattern comprises a 12T pattern and a 24T pattern” as the Examiner correctly notes in objecting to Claim 53.

With respect to Claim 56, there is no teaching or suggestion in Alex of the following language: “an amplitude of a signal derived from said early warning pattern in said data track and having a greater susceptibility to thermal decay than a 1T pattern in said data track” (emphasis added) as the Examiner correctly notes in allowing Claims 21 and 30. Claims 57-60 depend from Claim 56 and are believed to be allowable for at least the same reasons as Claim 56.

With respect to Claim 61, there is no teaching or suggestion in Alex of the following language: “a test pattern on the track has a different data density than user data on the track” (emphasis added) as mentioned above for Claim 47. Claims 62-65 depend from Claim 61 and are believed to be allowable for at least the same reasons as Claim 61.

With respect to Claim 66, there is no teaching or suggestion in Alex of the following language: “a test pattern on the track has a larger data density than user data on the track” (emphasis added) as mentioned above for Claim 1. Claims 67-70 depend from Claim 66 and are believed to be allowable for at least the same reasons as Claim 66.

With respect to Claim 71, there is no teaching or suggestion in Alex of the following language: “a test pattern on the track has a smaller data density than user data on the track” (emphasis added) as the Examiner correctly notes in objecting to Claim 12. Claims 72-75 depend from Claim 71 and are believed to be allowable for at least the same reasons as Claim 71.

With respect to Claim 76, there is no teaching or suggestion in Alex of the following language: “a test pattern on the track has a different data density than a 1T pattern on the track”

(emphasis added) as the Examiner correctly notes in allowing Claim 30. Claims 77-80 depend from Claim 76 and are believed to be allowable for at least the same reasons as Claim 76.

With respect to Claim 81, there is no teaching or suggestion in Alex of the following language: “identifying a sector on the disk that has a greater than average susceptibility to thermal decay” then “writing a test pattern to the sector in response to identifying the sector.” In Alex, read-write analyzer 81 supplies a signal to head 43 and then head 43 supplies the readback signal to spectrum analyzer 82 and oscilloscope 83 so that a user can manually detect changes in the frequency and time domains of the readback signal. The user cannot possibly identify a susceptible sector on disk 12 before the signal is supplied. Claims 82-85 depend from Claim 81 and are believed to be allowable for at least the same reasons as Claim 81.

With respect to Claim 86, there is no teaching or suggestion in Alex of the following language: “identifying a sector on the disk that has a greater than average susceptibility to thermal decay” then “writing a test pattern to the sector in response to identifying the sector” as mentioned above for Claim 81. Furthermore, there is no teaching or suggestion in Alex of the following language: “the test pattern has a greater susceptibility to thermal decay than any servo information and any user data on the disk.” Claims 87-90 depend from Claim 86 and are believed to be allowable for at least the same reasons as Claim 86.

With respect to Claim 91, there is no teaching or suggestion in Alex of the following language: “identifying a sector on the disk that has a greater than average susceptibility to thermal decay” then “writing a test pattern to the sector in response to identifying the sector” as mentioned above for Claim 81. Furthermore, there is no teaching or suggestion in Alex of the following language: “writing a test pattern to the sector in response to identifying the sector; reading the test pattern from the sector to obtain a reference amplitude; storing the reference

amplitude in the disk drive” then “shipping the disk drive from a factory to an end user; reading the test pattern from the sector to obtain a measured amplitude; comparing the reference amplitude and the measured amplitude; and producing a thermal decay warning signal if the comparison is unfavorable” (emphasis added). Claims 92-95 depend from Claim 91 and are believed to be allowable for at least the same reasons as Claim 91.

With respect to Claim 96, there is no teaching or suggestion in Alex of the following language: “writing evaluation test patterns to the disk; reading the evaluation test patterns from the disk; selecting a test pattern from the evaluation test patterns that exhibits the greatest amount of thermal decay; writing the test pattern to a sector on the disk” (emphasis added). Claims 97-100 depend from Claim 96 and are believed to be allowable for at least the same reasons as Claim 96.

IV. Other Amendments

The specification and claims have been amended to improve readability. No new matter has been added.

V. Additional Claim Fees

In determining whether additional claim fees are due, reference is made to the Fee Calculation Table (below).

Fee Calculation Table

	Claims Remaining After Amendment		Highest Number Previously Paid For	Present Extra	Rate	Additional Fee
Total (37 CFR 1.16(c))	100	Minus	53	= 47	x \$50 =	\$ 2350.00
Independent (37 CFR 1.16(b))	15	Minus	6	= 9	x \$200 =	\$1800.00

As set forth in the Fee Calculation Table (above), Applicants previously paid claim fees for fifty-three (53) total claims and for six (6) independent claims. Therefore, Applicants hereby authorize the Commissioner to charge the credit card identified on the enclosed Form PTO-2038 in the amount of \$4150.00 for the presentation of forty-seven (47) total claims over fifty-three (53) and nine (9) independent claims over six (6). Although Applicants believe that no other fees are due, the Commissioner is hereby authorized to charge Deposit Account No. 50-2198 for any fee deficiencies associated with filing this paper.

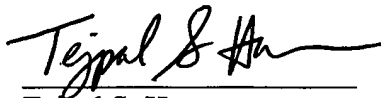
VI. Conclusion

It is believed the above comments establish patentability. Applicants do not necessarily accede to the assertions and statements in the Office Action, whether or not expressly addressed.

Applicants believe that the application appears to be in form for allowance. Accordingly, reconsideration and allowance thereof is respectfully requested.

The Examiner is invited to contact the undersigned at the below-listed telephone number regarding any matters relating to the present application.

Respectfully submitted,



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